

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

I. Status of the claims

Claim 1 is currently amended to recite “wherein the movement of the tubular organ structures is calculated from a changing position of the instrument.” Support for this amendment can be found throughout the specification, in particular, on page 5 in the fourth, sixth, and eighth paragraphs.

Because the foregoing amendment does not introduce new matter, entry thereof by the Examiner is respectfully requested. Claims 2-5, 7-9, 11-15, 25, 27 and 29 are original. Claims 6, 10, 16, 23, 24, 26, 28 and 30 were previously presented. Claims 17-22 are withdrawn. Upon entry, claims 1-16 and 23-30 will be pending for examination.

II. Claim Rejections under 35 U.S.C. § 102(e)

In the Final Office Action dated June 14, 2011, the Examiner rejected claims 1-15 and 23 -30 under 35 U.S.C. §102(e) as allegedly anticipated by US Patent No. 7,844,320 (“Shahidi”). Applicants respectfully traverse this ground for rejection.

Applicants submitted an amendment and reply dated October 13, 2011 in response to the Final Office Action, and an Advisory Action was issued on October 25, 2010. In the Advisory Action, the Examiner contends that Applicants’ amendments and arguments are insufficient to overcome Shahidi. Accordingly, this reply is directed to the Advisory Action.

In the Advisory Action, the Examiner insists that Shahidi teaches taking organ movement into account because Shahidi “teach[es] registering the patient’s anatomy or organ structure in an ongoing surgical process.” Advisory Action at page 2. Applicants respectfully disagree with this analysis and conclusion. To anticipate a claimed invention, a reference must teach each and every element of the claims. As detailed below, Shahidi fails to meet this requirement.

**A. Shahidi does not teach factoring in organ movement
for a method for navigation during medical interventions**

The Examiner in the Advisory Action asserts that Shahidi teaches taking organ movement into account in a method for navigation during medical interventions. The sentence in Shahidi cited by the Examiner, however, only states that “fiducial markers ... register the patient’s anatomy with the 3D-image in an ongoing surgical process.” *See* Shahidi at col. 12, line 13. More specifically, Shahidi explains that, fiducial markers, labeled as 113 and 114 in Figure 1, are “attached to [a patient’s] head to enable registration of images generated by previously obtained scan data.” *See* Shahidi at col. 5, line 38. By interpreting this disclosure of Shahidi as teaching taking organ movement into account, the Examiner seems to suggest that the fiducial markers fixed on a patient’s head can track the head’s movement relative to a fixed non-moving “3D-image” of the head.

However, Shahidi describes two separate registrations: (1) “register[ation] [of] the patient’s anatomy” and (2) “registration of images generated by previously obtained scan data” (presumably the “3D-image”). A person of ordinary skill in the art would not understand Shahidi’s disclosure regarding “register[ing] the patient’s anatomy” to mean “taking into account the movement of the anatomy”, as required by the claimed invention. Shahidi therefore fails to teach taking organ movement into account.

Accordingly, by this reason alone, Shahidi does not anticipate the claimed invention because it fails to teach each and every element of the claimed invention.

**B. The claimed invention utilizes a different
technique as compared to the disclosure of Shahidi.**

Shahidi does not teach or suggest measuring the changing position of the instrument, as required by the claimed invention. Specifically, unlike Shahidi, which utilizes fiducial markers fixed on the patient’s anatomy, in the claimed invention “the movement of the tubular organ structure [is] calculated from the chronologically *changing position of the instrument*, particular[ly] in the case of cyclical movement [such as] respiratory movement.”

See the Specification at page 5, fourth paragraph. The specification further explains that, “[t]he [organ] movement can be computed in particular from the components of the movement of the instrument that are orthogonal to the tubular organ structure.” *Id.*

To clarify the distinctions between Shahidi and the claimed invention, Applicants have amended claim 1 to emphasize that the claimed invention calculates the movement of the tubular organ structures based on a changing position of the instrument. Specifically, claim 1 as amended recites “wherein the movement of the tubular organ structures are calculated from a changing position of the instrument.”

Accordingly, Shahidi does not teach each and every element of the claimed invention and, therefore, withdrawal of this ground for rejection by the Examiner is respectfully requested.

III. Claim Rejections under 35 U.S.C. § 103(a)

The Examiner does not indicate in the Advisory Action whether the obviousness rejection under 35 U.S.C. 103(a) over Shahidi in view of U.S. Patent No. 5,928,137 (“Green”) issued in the Final Office Action is maintained. Applicants assume that the Examiner maintains the obviousness rejection and traverses this rejection below.

As discussed above, Shahidi first fails to teach factoring in organ movement for a method for navigation during medical interventions and additionally the reference fails to teach or suggest the technique by which the claimed invention takes organ movement into account. Shahidi therefore does not teach or suggest each and every element of the claimed invention. Green does not cure Shahidi’s deficiencies. As a result, Shahidi and Green combined do not teach or suggest each and every element of the claimed invention.

Accordingly, Applicants respectfully request that the rejection against claim 16 be withdrawn.

IV. Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By



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